Skidder

A skidder is a tractor that uses a cable, grapple, or both, to secure and drag the partially suspended logs / trees to a deck. Skidders may be mounted on tracks or tires. Skidders are the most common logging system in North Carolina and their use is appropriate for most of the site conditions found in the State.

- When not used properly, skidders can severely impact water quality and lead to conditions that may degrade long-term site productivity.
- Skidders that are mounted on tracks, extra-wide tires, or dual tires can further minimize intensive soil disturbance in some cases and allow operations to continue during adverse conditions.

Shovel Logging (Loading)

This is a term used to describe a log / tree loader that is mounted on self-propelled tracks. These machines can construct a homemade 'mat trail' made up of logs that other equipment then travels upon, instead of the ground. This mat trail is then removed as skidding is completed. Shovel systems are usually limited to total harvests due to the need to use tree/log material for the mat trail.

- Shovel systems are able to work effectively in wetter areas than a skidder system because they move timber with the reach and swing of the shovel-arm rather than the traffic movement of a wheeled or tracked machine.
- Shovel systems allow logging on extremely wet-natured sites while minimizing site disturbance.
- Due to the ability of this equipment to operate in saturated soil conditions, care must be exercised to ensure sufficient SMZs are established, marked, and maintained.

Swing Systems

Swing systems use a combination of all these systems to best utilize each component. For example, a track-mounted felling machine harvests the timber; a shovel-loader moves the trees across a wet area using a 'mat trail' to reach high ground. From there, a rubber-tired skidder moves the logs across dry ground to the deck.

- Water quality and site productivity is usually well protected, since each machine is being used for its intended purpose.

Track-Mounted Equipment

These are machines mounted on rubber or metal tracks instead of rubber tires. Track-mounted machines are available for tree cutting, skidding, processing, loading or roadwork.

- When compared to rubber-tired equipment, track machines protect soil better due to the increased "footprint" area of the tracks. This decreases the ground pressure of the unit.
- Tracked machines minimize soil compaction, especially on wet soil conditions. Due to the ability of this equipment to operate in saturated soil conditions, care must be exercised to ensure sufficient SMZs are established, marked, and maintained.

Whole-Tree Chipping

Whole-tree chipping uses large machines that break apart trees into small chip-sized material. These chips are then placed into a chipvan that is transported by tractor-trailer. The chipped material is used either for making paper or as fuel. This system is typically used on sites that have an abundance of low-quality timber.

- Chips can serve as a very effective soil cushion on decks and skid trails to minimize and sometimes prevent soil disturbance from occurring.
- Chipping often leaves very little leftover woody material on the site that could otherwise be used for stabilizing skid trails, stream crossing approachways, or decks.
- Forest access roads often need to be wider, flatter, and have broader turns than traditional logging roads, so stability is provided for the high center-of-gravity chipvan trailers.